

## A revision of the genus *Plagiopetalum* Rehd. (*Melastomataceae*)

C. HANSEN

**Summary :** In agreement with LAUENER (1972) all material hitherto known in *Plagiopetalum* is referred to *P. esquirolii* (Lév.) Rehd. Three varieties are recognized (var. *esquirolii*, var. *serratum* (Diels) C. Hansen comb. & stat. nov., and var. *quadrangulum* (Rehd.) C. Hansen comb. nov.). *Phyllagathis tenuicaulis* C. Chen is transferred to *Plagiopetalum* and recognized as the second species in the genus (*P. tenuicaule* (C. Chen) C. Hansen comb. nov.). Parts of flowers and fruits of *P. esquirolii* and the distribution of both species are illustrated.

**Résumé :** En accord avec LAUENER (1972) tous les matériaux jusqu'ici reconnus dans le genre *Plagiopetalum* sont rapportés à *P. esquirolii* (Lév.) Rehd. Trois variétés sont reconnues (var. *esquirolii*, var. *serratum* (Diels) C. Hansen comb. & stat. nov., et var. *quadrangulum* (Rehd.) C. Hansen comb. nov.). *Phyllagathis tenuicaulis* C. Chen, transféré à *Plagiopetalum*, est la seconde espèce du genre (*P. tenuicaule* (C. Chen) C. Hansen comb. nov.). Des détails des fleurs et des fruits de *P. esquirolii* et les aires de distribution des deux espèces sont figurés.

Carlo Hansen, The Botanical Museum, Gothersgade 130, DK-1123 Copenhagen K, Denmark.

*Phyllagathis tenuicaulis* C. Chen (1984) is here referred to *Plagiopetalum* (*P. tenuicaule*). If for the present that species is omitted from the discussion, *Plagiopetalum*, as represented by the material so far referred to it, must be said to be a genus which can be recognized by its general appearance as readily as can a *Sonerila*, a *Sarcopyramis*, a *Phyllagathis*, etc. Nevertheless the genus has caused much confusion and specimens belonging to it have been named in a number of genera, and the number of species accepted has varied. As regards recent literature the concept expressed in this paper agrees with LAUENER's (1972), who accepts only one species, but disagrees with CHEN's (1984), who accepts two species. As to generic affinities it disagrees with MAXWELL's (1983). Certainly the material varies as regards the occurrence of gland-tipped hairs in the inflorescence; the size and structure of the inflorescence; the degree of extension of the sepalous keel (Fig. 1, A, F); the presence of the dorsal spur of the stamens; and the presence of a crown. This variation, however, justifies only the recognition of infra-specific taxa.

Still omitting *P. tenuicaule*, *Plagiopetalum* may be recognized as a shrub with ribbed to winged branchlets; with relatively narrow leaves, those in a pair usually unequal; with an interpetiolar row of hairs which eventually swell; with a small terminal inflorescence (thyrses or slightly compound dichasium); with low triangular keeled sepals (Fig. 1, A); with isomorphic usually dorsally spurred unequal stamens (Fig. 1, D, E); usually without a crown, but top of ovary rounded (Fig. 1, B, G, H); with sessile placentas (Fig. 1, G, I); with usually recognizable seeds (Fig. 1, J); and with a characteristic old fruit (Fig. 1, H).

Yet specimens belonging to *P. esquirolii* have been described and named in *Sonerila*, *Barthea*, *Oxyspora* and *Allomorpha*, and recently the species was transferred to *Anerincleistus* (MAXWELL, 1983). *Bredia hainanensis* was wrongly transferred to *Plagiopetalum* by LI (1944) as the only other species he recognized in the genus. *P. esquirolii* differs from *Sonerila* in its 4-merous flowers and sessile placentas; from *Barthea* in the absence of ventral staminal appendages; from *Oxyspora* in its sessile placentas and its unequal leaves; from *Allomorpha* in its fruits and seeds; and from *Anerincleistus* in its sessile placentas and non-striate seeds papillae. The affinities to the genus which also in my opinion is the closest relative of *Plagiopetalum* has been indicated only by REHDER (1917) and KRÄNZLIN (1931). That genus is *Fordiophyton* which is much more like it in its general appearance than any other proposed genus and agrees also in details of the shoots: winged stem, interpetiolar row of hairs, and leaves usually unequal in a pair. Besides the differences given by REHDER *Fordiophyton* distinctly differs in having raphides.

If *Phyllagathis tenuicaulis* is now included in the discussion, two firm statements must first be made. Firstly the species belongs to *Plagiopetalum*, secondly it distinctly falls outside the variation of *P. esquirolii*, i.e. it is a species of its own (*P. tenuicaule*; see notes there for differences).

The two species agree in the ribbed to winged stem; in the interpetiolar row of hairs; in the isomorphic stamens; and in the sessile placentas. These therefore are the characters among those which are known in both species, by which the genus can be recognized.

## PLAGIOPETALUM Rehd.

In SARG., Pl. Wils. 3 : 452 (1917). — TYPE SPECIES : *P. quadrangulum* Rehd.

Shrubs or herbaceous perennials. Stem subquadrangular with four ribs or low wings which may suberize, with up to 1 mm long usually sparse soft often curved hairs, sometimes suberizing, gland-tipped or not, at least present at the nodes forming an interpetiolar row, often with bases united, and usually, in addition, with very sparse minute brown glands or more often minute uni-seriate glandular hairs. Leaves opposite, decussate, isomorphic and equal to unequal in a pair; leaves sessile or petiole to 25 mm long, glabrous or clothed as stem; blade ovate or very broadly ovate, very rarely elliptic, usually  $4-9 \times 0.5-3$  cm; base broadly attenuate, acute or rounded, rarely subcordate, apex acuminate or broadly or long acuminate, rarely acute or broadly acute, margin entire or serrulate, with a few 0.5-1 mm hairs; 3-nerved and usually with an additional pair of faint intramarginal nerves, sometimes glabrous but usually sparsely with minute glandular hairs and soft patent hairs, gland-tipped or not. Inflorescence terminal, usually thyrsoïd, usually 1.5-4 cm long, clothed with patent gland-tipped hairs, or such hairs or soft glandless hairs in addition to minute glandular hairs, or only the last-mentioned; peduncle usually less than 2.5 cm long; bracts inconspicuous, or lower ones ovate and up to 10 mm long, ciliate, or with some gland-tipped hairs, or with no obvious indumentum; pedicel to 8 mm long in fruit, clothed as inflorescence branches. Flowers 4-merous. Hypanthium campanulate, quadrangular, usually  $4-5 \times 1.5-2$  mm, with very sparse minute glandular hairs, and sometimes, in addition, patent hairs, gland-tipped or not. Sepals very low and broad, triangular, at most 1 mm long, shortly connate, keeled or

thickened dorsally, clothed as hypanthium. Petals known only in *P. esquirolii*. Stamens 8, more or less isomorphic, equal or unequal; filaments 2.5-6.8 mm long, glabrous; anthers narrow, ovate or oblong, 2.3-6.5 mm long, usually slightly curved, sacs basally free or attached, connective inappendiculate, or most often tuberculate or spurred dorsally, pore 1, usually slightly on ventral side of and narrower than apex. Ovary known only in *P. esquirolii*, except for crown. Style 6.5-14 mm long, glabrous, stigma small. Fruits and seeds known only in *P. esquirolii*.

# KEY TO THE SPECIES

1. Much-branched shrub to 2 m high with narrow ovate to elliptic leaves, usually unequal in a pair ..... *P. esquirolii*
- 1'. Unbranched herbaceous perennial to ca. 20 cm high with very broad ovate leaves, equal in a pair ..... *P. tenuicaule*

## 1. *Plagiopetalum esquirolii* (Lév.) Rehd.

J. Arnold Arbor. 15 : 110 (1934).

*Sonerila esquirolii* LÉV., Bull. Soc. Bot. France 54 : 368 (1907, non 1913). Type : *Esquirol* 645, China, Hoa-Ouan-Yao (holo-, E). (= var. *esquirolii*).

— *Anerincleistus esquirolii* (LÉV.) MAXW., Gard. Bull. Singapore 35 : 214 (1983).

*Barthea blinii* LÉV., Feddes Repert. Spec. Nov. Regni Veg. 11 : 494 (1913). Type : *Esquirol* 215, anfractuosités du pic de Ko-Tchang-Keou (holo-, E). (= var. *esquirolii*).

— *Allomorpha blinii* (LÉV.) GUILLAUMIN, Bull. Soc. Bot. France 60 : 87 (1913).

— *Plagiopetalum blinii* (LÉV.) C. Y. WU, Fl. Yunnanica 2 : 92 (1979), nom. superfl.

*Oxyspora serrata* DIELS, Notes Roy. Bot. Gard. Edinburgh 5 : 252 (1912). Type : *Forrest* 960, Upper Burmah, Irrawadi-Ming Kwang pass, Lat. 25°50' N (holo-, E). (= var. *serratum*).

— *Plagiopetalum serratum* (DIELS) DIELS, Bot. Jahrb. Syst. 65 : 100 (1932).

*Sonerila esquirolii* LÉV., Feddes Repert. Spec. Nov. Regni Veg. 11 : 494 (1913, non 1907). Type : *Esquirol* 644, China, Kouy-Tchéou (holo-, E; iso-, P, labelled *Cavalerie* 644). (= var. *esquirolii*).

*Plagiopetalum quadrangulum* REHD. in SARG., Pl. Wils. 3 : 453 (1917). Type : *Wilson* 3261, China, Western Szechuan, Hung-ya Hsien (holo-, A; iso-, BM, E, K). (= var. *quadrangulum*).

— *Plagiopetalum serratum* (DIELS) DIELS var. *quadrangulum* (REHD.) C. CHEN, Bull. Bot. Research 4 : 34 (1984).

*Sonerila henryi* KRAENZL., Vierteljahrsschr. Naturf. Ges. Zürich 76 : 152 (1931). Type : *Henry* 9077c, China, Yunnan, Mengtse (holo-, A). (= var. *esquirolii*).

— *Plagiopetalum henryi* (KRAENZL.) S. Y. HU, J. Arnold Arbor. 33 : 172 (1952), nom. superfl.

*Allomorpha flexuosa* HAND.-MAZZ., Sinensia 3 : 195 (1933). Type : *Ching* 7012, Kwangsi : Tsin-lung-shan in distr. Lin-yen septentr. (not seen; synonym according to CHEN, 1984). (= var. *esquirolii*?).

*Plagiopetalum esquirolii* (LÉV.) REHD. var. *septemnervium* C. CHEN, Bull. Bot. Research 4 : 33 (1984). Type : *Wang & Liu* 83914, Yunnan, Ma-li-po, Huang-jin-yin (KUN). (= var. *esquirolii*).

*Barthea cavaleriei* LÉV., Feddes Repert. Spec. Nov. Regni Veg. 8 : 61 (1910), p.p. quoad *Esquirol* 215 (one of three syntypes), see *Barthea blinii* LÉV. above and note p. 133.

Much-branched shrub to 2 m high. Stem often sulcate on two opposed sides, with four fine ribs when young, ribs more or less stout and suberized when older, with very sparse minute brown glands, or more often minute uni-seriate bent gland-tipped hairs, and usually with 0.1-1 mm long often curved non-glandular hairs, suberizing and then sometimes prickly-like; internodes usually 1-4 cm long. Leaves isomorphic, subequal or most often unequal in a

pair ; petiole of smaller leaves 1-5 (-10) mm long, of larger leaves 5-10 (-25) mm long, clothed as stem, hairs up to 3 mm long, mostly along sulcus, rarely suberizing ; blade ovate, or very rarely elliptic, smaller ones 1.5-6 (-11.5)  $\times$  0.5-1.2 (-4) cm, larger ones (2.6-) 4-9 (-18)  $\times$  (0.7-) 1.4-3 (-6) cm ; base broadly acute to rounded, rarely subcordate, apex acuminate or long acuminate, rarely acute, margin entire to serrulate with 0.5-1 mm long soft hairs ; sometimes glabrous, but usually with minute brown glands or uni-seriate gland-tipped hairs and up to 1 mm long soft hairs above and below.

Inflorescence thyrsoid, very variable in size and structure, but flowers usually clustered ultimately, 1.5-4 (-10) cm long, clothed as stem but sparser, or soft hairs absent, or with stout 0.5-1 mm long patent hairs tipped with an elongated gland ; peduncle (0-) 1-2.5 (-5.5) cm long ; bracts leaf-like, ovate, 5-10 mm long, at lower nodes, decreasing in size upwards and those subtending flowers subulate and less than 1 mm long, with gland-tipped hairs or indumentum inconspicuous ; pedicel from 2.5-8 mm long in flower and fruit, clothed as peduncle. Hypanthium 4-5 (-6.5)  $\times$  1.5-2 (-3) mm, thin-walled, with very sparse minute brown glands or uni-seriate gland-tipped hairs and a few usually stout short soft hairs or up to 1.5 mm long gland-tipped hairs. Sepals ca. 1 mm high, clothed as hypanthium, keel conspicuous, variously shaped in lateral view, but always pointed somewhere, sometimes long extended and exceeding apex by up to 1.5 mm. Petals elliptic to oblong, usually ca. 8  $\times$  3.5 mm, acuminate, thin, pinkish. Stamens 8, slightly dimorphic, unequal ; filaments of shorter anthers 3.5-5.7 mm long, of longer ones 4.5-6.8 mm long ; anthers ovate, shorter ones straight or bending forward apically, 2.5-4.7 mm long, longer ones slightly S-shaped or at least curving forward apically, 4.2-6.5 mm long, basal 0.2-0.4 mm of anther sacs free, both kinds of anthers inappendiculate ventrally and with a dorsal tubercle or short wide spur, pendant or bending backwards or even upwards, very rarely inappendiculate also dorsally ; pore apical or slightly ventral. Ovary 4-locular, about two thirds the length of hypanthium and adnate to it for about three fourths its length, episealous anther pockets slightly more and epipetalous anther pockets slightly less than half-way to base, crown of 4 shortly connate denticulate lobes, or usually absent and top of ovary with four rounded humps exceeding base of style, glabrous or with sparse minute uni-seriate hairs or a few 0.5-2 mm long gland-tipped hairs ; placentas sessile, thick, fleshy, at most bulging into locules. Style 9-14 mm long.

Mature fruit urceolate with capsule almost as long as hypanthium, quadrangular at least basally, 4-5.5  $\times$  3.5-4 mm, often with some swelling of the basal part of hypanthium, usually with 8 fine distinct or faint ribs at least above swelling, dehiscence loculicidal ; old fruits spheroidal, subquadrangular with rounded angles, composed of the empty capsule itself exceeding by half its length the swollen persistent basal part of hypanthium, valves thin, not accrescent. Seeds narrowly obovate, with a collapsed extension apically, 0.7-0.9 mm long, slightly tuberculate, raphe extending onto apex usually with strophiole along its whole length, testa light brown, strophiole brown. — Flowers mainly from July to October and fruits from August to October.

**HABITAT :** In light or heavy shade on cliffs or rocks in ravines, by banks of streams and other moist localities in forests ; soil humus on sandstone or granite ; one gathering from Szechuan collected between 750 and 1000 m, all others between 1300 and 3500 m altitude.

**DISTRIBUTION :** India, Burma, China, and Vietnam (Fig. 2 ; because of the unreliability of D'ALLEIZETTE's labels his collection from Annam has not been plotted).

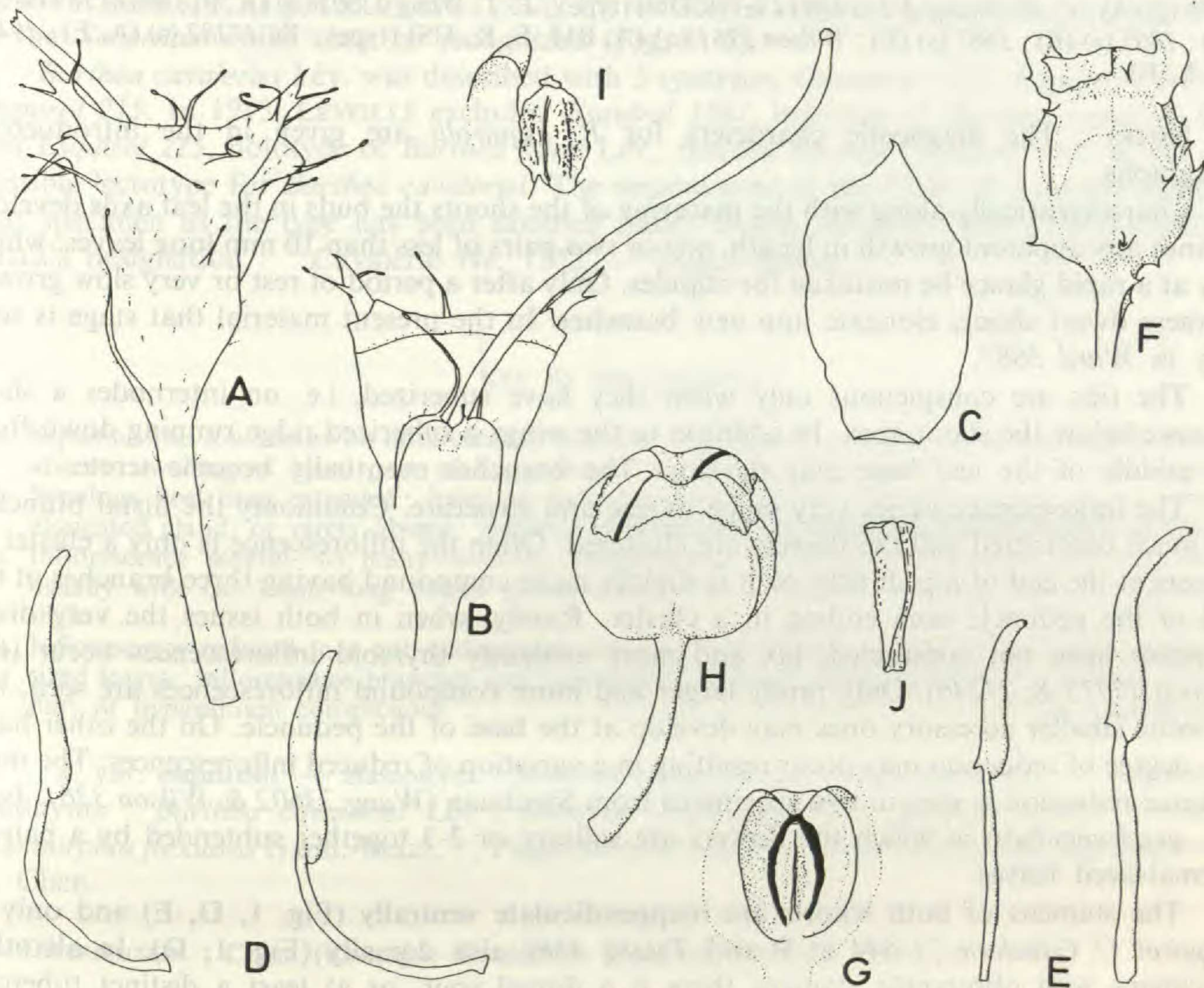


Fig. 1. — *Plagiopetalum esquirolii*, parts of flowers and fruits: **A**, flower (flattened), hypanthium and sepals; **B**, flower, one half of hypanthium removed; **C**, petal; **D**, episepalous and epipetalous stamens seen laterally, both non-spurred; **E**, epipetalous and episepalous stamens seen laterally, both spurred; **F**, mature fruit, sinuate dotted line showing border between swelling and not swelling part of hypanthium; **G**, mature fruit, capsule with one valve and seeds removed, centrally the loosened placental column with concave placentas, hypanthium partly indicated by dotted line; **H**, old dehiscent fruit; **I**, loosened placental column with bulging placentas, and one remaining valve; **J**, seed seen laterally. (A-I, ca.  $\times 5$ ; J, ca.  $\times 20$ ). A, B, from Forrest 17773 at K; C, E, H, I, from d'Alleizette s.n. at P; D, from Tsiang 4581 at K; F, G, J, from Henry 13520 at NY.

SPECIMENS STUDIED. — (e = var. *esquirolii*, q = var. *quadrangulum*, s = var. *serratum*): d'Alleizette s.n., Annam (locality unreliable) (e) (P); Bor 6222 (s) (K); Cavalerie 644 (mistake for *Esquirol*? 644) (e) (P); Ching 7012 (not seen) (type); *Esquirol* 215 (e) (E) (type); 644 (e) (E); 645 (e) (E) (type); 5023 (e) (P); Farrer 1243 (s) (E); Feng 11028 (e) (A); 12674 (e) (A); Forrest 960 (s) (E) (type); 992 (s) (E); 8892 (s) (E, K); 9283 (s) (E); 12006 (s) (A, BM, E, K); 17773 (s) (E, K, P); 27246 (s) (BM, E, K, NY, P, W); 27562 (s) (A, K, US); Henry 9077 (e) (A, K, NY); 9077 A (e) (BM, K, US); 9077 B (e) (A, K, MO); 9077 C (e) (A, BM) (type); 9077 D (e) (K, NY, US); 9721 (e) (A, E, K, MO, NY); 11438 (e) (A, E, K, NY); 13520 (e) (K, NY); Howell 107 (s) (E); Ko 55696 (e) (A); Lau 28650 (e) (A, E); Naw Mu Pa 17447 (s) (K); Pételot 3092 (e) (P); 7135 (e) (P); Rock 6926 (s) (A, NY, US); 7000 (s) (A, US); 7015 (s) (A, US); 7527 (s) (A, US); 11514 (s) (A, US); Tsai 51569 (e) (A); 56606 (e) (A); 62394 (e) (A); 62559 (e) (A, P); Tsiang 4581 (e) (K, NY, S); 9344 (e) (A, BM, E, US); C. W. Wang 67009 (s) (A); 67337 (s) (A);

72176 (s) (A); C. W. Wang & Liu 83914 (e) (KUN) (type); F. T. Wang 23602 (q) (A, P); Ward 189 (s) (A, NY); 1865 (s) (E); 3687 (s) (E); Wilson 3261 (q) (A, BM, E, K, US) (type); Yü 17282 (s) (A, E); 19488 (s) (A, E).

NOTES : The diagnostic characters for *P. esquirolii* are given in the introductory paragraphs.

Characteristically along with the maturing of the shoots the buds in the leaf axils develop, without any apparent growth in length, one or two pairs of less than 10 mm long leaves, which may at a rapid glance be mistaken for stipules. Only after a period of rest or very slow growth do these dwarf shoots elongate into new branches. In the present material that stage is seen only in Ward 3687.

The ribs are conspicuous only when they have suberized, i.e. on internodes a short distance below the shoot apex. In addition to the wings a suberized ridge running down from the middle of the leaf base may develop. The branches eventually become terete.

The inflorescence varies very much in size and structure. Commonly the distal branches are much contracted and the flowers are clustered. Often the inflorescence is only a cluster of flowers at the end of a peduncle, or it is slightly more compound having three branches at the end of the peduncle each ending in a cluster. Rarely, when in both issues the very distal branches have not contracted, lax and more evidently thyrsoid inflorescences occur (e.g. Forrest 17773 & 27246). Only rarely larger and more compound inflorescences are seen, but opposite smaller accessory ones may develop at the base of the peduncle. On the other hand any degree of reduction may occur resulting in a variation of reduced inflorescences. The most extreme reduction is seen in two specimens from Szechuan (Wang 23602 & Wilson 3261, both var. *quadrangulum*) in which the flowers are solitary or 2-3 together subtended by a pair of normal-sized leaves.

The stamens of both whorls are inappendiculate ventrally (Fig. 1, D, E) and only in *Esquirol* ("Cavalerie") 644 at P and *Tsiang* 4581 also dorsally (Fig. 1, D). In all other specimens with observable stamens there is a dorsal spur, or at least a distinct tubercle.

A crown has been observed only in two specimens *Esquirol* ("Cavalerie") 644 (var. *esquirolii*) & Wilson 3261 (var. *quadrangulum*). The lobes are thin, dentate and not or only slightly connate. It is unknown whether they will become enlarged in fruit, but most likely they will not, because generally the valves tend to thicken only slightly.

The whole hypanthium persists until maturity of the fruit. Generally a more or less distinct swelling of the basal part takes place. The swollen and non-swollen parts meet in a sinuate line of four waves, the troughs being at the angles of the fruit and the crests in between (Fig. 1, F). Only in Wilson 3261 the two parts meet in a straight line. At or soon after dehiscence the thin part of the hypanthium breaks off, but the swollen part, now with the few hardly spreading valves of the rounded top of ovary exceeding it by up to half their length, may persist for a long time (Fig. 1, H). No further actual dehiscence occurs, only a simple decay.

Apically above the embryo the seed has an expansion which may be inflated when the seed is developing, but has irregularly collapsed in the mature seed. The expansion usually is slightly on the dorsal side of the apex and forms a short blunt beak. The raphe furrow and usually a distinct strand of strophilar cells in it run along the whole length of the seed including the expansion and often bend slightly over the top of the seed. Although by no

means very unique as stated by HU (1952), the seeds of *P. esquirolii* are among the rather few in the *Sonerilae* which may be recognized (Fig. 1, J).

*Barthea cavaleriei* Lév. was described with 3 syntypes, *Cavalerie* 1552, *Esquirol* 1581, and *Esquirol* 215. In 1913, LÉVEILLÉ excluded *Esquirol* 1581, holotype of *Barthea esquirolii* Lév., and *Esquirol* 215, holotype of *Barthea blinii* Lév., thereby leaving *Cavalerie* 1552 as the only possible lectotype for *Barthea cavaleriei*. The requirement of the Code of a formal choice of that specimen as the type has been satisfied under *Bredia cavaleriei* (Lév.) Diels (1932) by DIELS's designation : "Cavalerie Nr. 1552 — Typus speciei".

#### KEY TO THE VARIETIES

- 1 a. Sepalous keel low ; hairs on inflorescence branches and hypanthium soft, not gland-tipped, or often absent ; swelling of basal part of hypanthium in old fruit pronounced . . . . 1 a. var. *esquirolii*
- b. Sepalous keel long extended ; hairs on inflorescence branches and hypanthium tipped with an elongated gland, or rarely absent ; swelling of basal part of hypanthium conspicuous or not. 2
- 2 a. Inflorescence several- to many-flowered, pedunculate ; inflorescence branches and hypanthium usually with ca. 1 mm long patent gland-tipped hairs ; swelling of basal part of hypanthium slight . . . . . 1 b. var. *serratum*
- b. Inflorescence reduced to a non-pedunculate cluster of 1-3 flowers, subtended by a pair of normal-sized leaves ; inflorescence branches and hypanthium without gland-tipped hairs ; swelling of basal part of hypanthium conspicuous . . . . . 1 c. var. *quadrangulum*

1 a. var. **esquirolii**. — Basionym : *Sonerila esquirolii* Lév. 1907, non 1913. — Taxonomic synonyms : *Barthea cavaleriei* Lév. ; *Sonerila esquirolii* 1913 ; *Sonerila henryi* Kraenzl. ; *Allomorpha flexuosa* Hand.-Mazz. ? ; *Plagiopetalum esquirolii* (Lév.) Rehd. var. *septemnervium* C. Chen.

DISTRIBUTION : China (Kwangsi, Kweichow, Yunnan), Vietnam (Tonkin). — Fig. 2.

1 b. var. **serratum** (Diels) C. Hansen, *comb. & stat. nov.* — Basionym : *Oxyspora serrata* Diels, Notes Roy. Bot. Gard. Edinburg 5 : 252 (1912).

DISTRIBUTION : India (Assam), North Burma, China (Yunnan). — Fig. 2.

1 c. var. **quadrangulum** (Rehd.) C. Hansen, *comb. nov.* — Basionym: *Plagiopetalum quadrangulum* Rehd. in Sarg., Pl. Wils. 3 : 453 (1917).

DISTRIBUTION : China (Szechuan). — Fig. 2.

NOTES ON THE VARIETIES : The basionyms and the taxonomic synonyms are repeated under the varieties. The nomenclatorial synonyms and most references to the literature are given only under the species.

The division into three varieties by the characters given in the key is supported also by their distribution in adjacent areas (Fig. 2), but many collecting sites have not been localized and the areas of var. *esquirolii* and var. *serratum* may overlap. In addition to the hairs mentioned in the key there usually are minute hairs of some kind on the inflorescence branches and hypanthium.

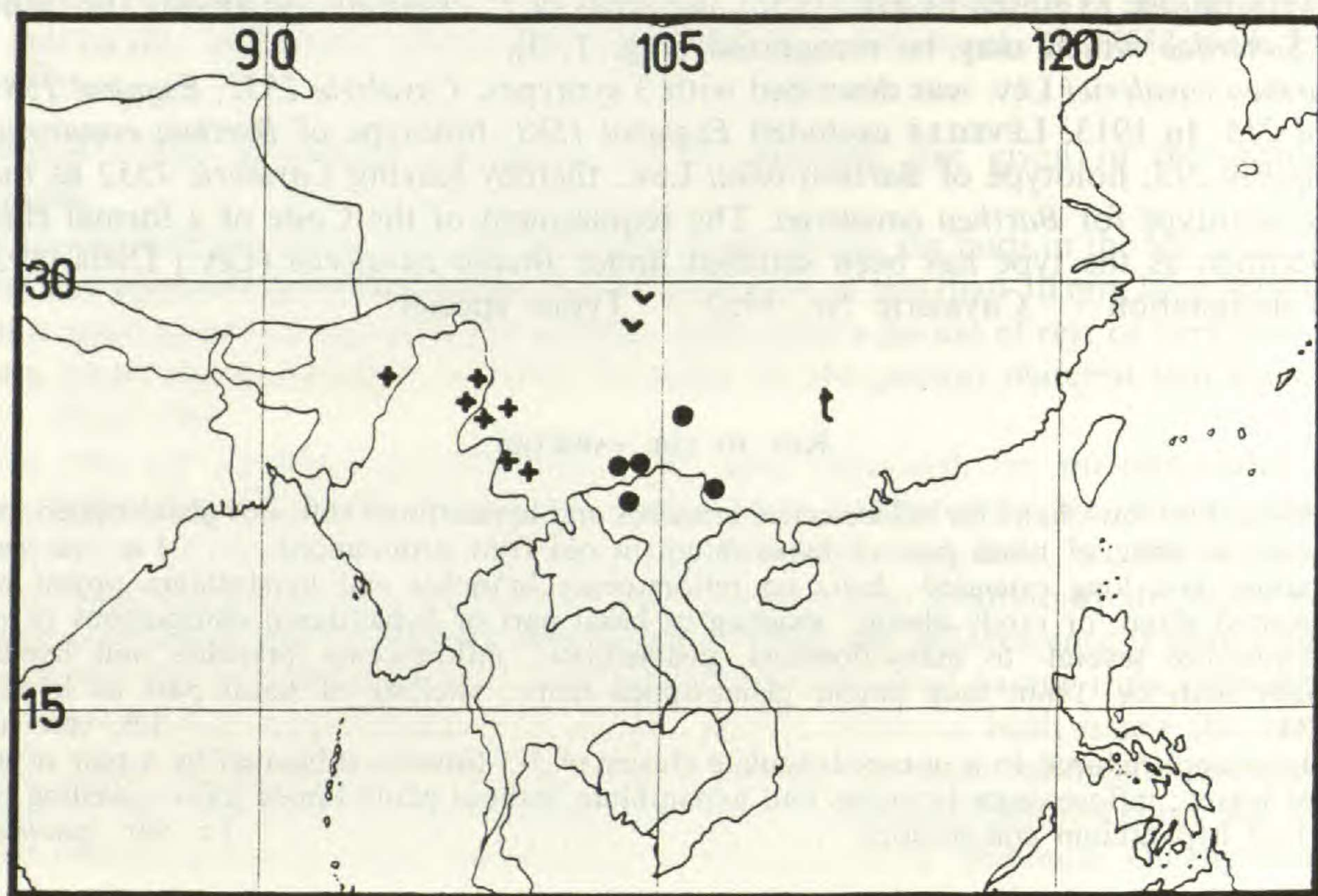


Fig. 2. — *Plagiopetalum esquirolii* and *P. tenuicaule*, total distributions : ● *P. esquirolii* var. *esquirolii*; + *P. esquirolii* var. *serratum*; v *P. esquirolii* var. *quadrangulum*; t *P. tenuicaule*.

## 2. *Plagiopetalum tenuicaule* (C. Chen) C. Hansen, *comb. nov.*

*Phyllagathis tenuicaulis* C. CHEN, Bull. Bot. Research 4 : 42 (1984). Type : *Guangxi Medic. Plant. Exp.* 231, Guangxi, Quanzhou (holo-, GXMI).

Herbaceous perennial, 14-22 cm high. Stem unbranched with four low wings, with ca. 1 mm long soft hairs, sparse and tipped with an elongated gland; internodes mostly 1-1.5 cm long. Leaves equal, sessile or petiole up to ca. 3 mm long, glabrous or with few gland-tipped hairs; blade very broadly ovate, 1-1.8 × 0.8-1.3 cm; base very broad, attenuate, rounded or subcordate, apex broadly acute or acuminate, margin finely serrulate, teeth narrow, ending in a ca. 1 mm long hair; 3-nerved, with soft ca. 1 mm long hairs, above usually glandless, below usually gland-tipped.

Inflorescence a simple or slightly compound dichasium, 2-3 cm long, clothed as stem, peduncle ca. 1 cm long; bracts ovate, 1.5-4 × 1-2 mm, ciliate with a few long hairs, or, distally, much reduced; pedicel 1-1.5 mm long in flower, glabrous or with a few gland-tipped hairs. Hypanthium 3 × ca. 2 mm, with a few ca. 0.4 mm long patent soft hairs, tipped with an inconspicuous elongated gland. Sepals ca. 0.7 mm high, with a dorsal conical thickening pointed into a gland-tipped hair. Stamens 8, isomorphic and equal; filaments flat, ca. 2.5 mm long; anthers oblong, curving forward, ca. 2.3 mm long (unstraightened); sacs fully attached

basally; connective narrow, distinct, inappendiculate; pore 1, apical, small. Ovary insufficiently known; crown distinct, lobes partly connate, slightly incised, teeth ending in a short gland-tipped hair. Style 6.5 mm long. Fruit and seeds unknown. — Buds and flowers in August.

HABITAT (in protologue) : Mountain meadow at ca. 1700 m altitude.

DISTRIBUTION : China (Kwangsi). — Fig. 2. Known only from type collection.

NOTES : *P. tenuicaule* can be recognized by its thin erect unbranched ca. 20 cm long winged stem with very broadly ovate leaves on upper two thirds of the stem at nodes usually 1-1.5 cm apart. Additional characteristics are the patent ca. 1 mm long gland-tipped hairs on stem, lower leaf surface, inflorescence, and hypanthium; the small simple to slightly compound dichasia; and the dense scales on basal stem.

Apparently short subterranean stolons with fleshy scales close together develop at the base of the stems. When later they grow into new flowering shoots the growth in length occurs only apically so that dense remains of the scales can be seen basally.

*P. tenuicaule* differs distinctly from *P. esquirolii* in its habit, in its basal scales, in its gland-tipped hairs on the stem, in the absence of minute uni-seriate gland-tipped hairs, and in its flowers, smaller in all known parts and with equal stamens.

### EXCLUDED SPECIES

*Plagiopetalum hainanense* (Merr. & Chun) Li (basionym : *Bredia hainanensis* Merr. & Chun) is transferred to **Phyllagathis** by C. Chen in Bull. Bot. Research 4 : 42, 1984 (*P. hainanensis* (Merr. & Chun) C. Chen).

ACKNOWLEDGEMENTS : I wish to thank the following herbaria for having placed their material at my disposal : A, BM, E, GXMI, K, M, MO, NY, P, S, UPS, US, W.

### REFERENCES

- CHEN, C., 1984. — Materia ad flora Melastomataceae sinensium. *Bull. Bot. Research* 4 : 33-68.  
CHEN, C., 1984. — Melastomataceae. In C. CHEN (ed.), *Flora reipublicae popularis sinicae* 53 (1) : 135-293.  
DIELS, L., 1932. — Beiträge zur Kenntnis der Melastomataceen Ostasiens. *Bot. Jahrb. Syst.* 65 : 97-119.  
HU, S. Y., 1952. — Notes on the flora of China, II. *J. Arnold Arbor.* 33 : 166-178.  
KRÄNZLIN, F., 1931. — Beiträge zur Kenntnis der Melastomataceae. *Vierteljahrsschr. Naturf. Ges. Zürich* 76 : 147-159.  
LAUENER, L. A., 1972. — Catalogue of the names published by Hector Léveillé: VII. *Notes Roy. Bot. Gard. Edinburgh* 31 : 397-435.  
LI, H. L., 1944. — Studies in the Melastomataceae of China. *J. Arnold Arbor.* 25 : 1-42.

MAXWELL, J. F., 1983. — Taxonomic and nomenclatural notes on *Oxyspora* DC., *Anerincleistus* Korth., *Poikilogyne* Baker f., and *Allomorpha* Bl. (Melastomataceae, tribe Oxysporeae). *Gard. Bull. Singapore* 35 : 209-226.

REHDER, A., 1917. — Melastomataceae. In C. S. SARGENT, *Plantae wilsonianae* 3 : 452-453.

# INDEX TO NAMES

## ALLOMORPHIA Blume

*blinii* (Lév.) Guillaumin, 129

*flexuosa* Hand.-Mazz., 129

## ANERINCLEISTUS Korth.

*esquirolii* (Lév.) Maxw., 129

## BARTHEA Hook. f.

*blinii* Lév., 129

*cavaleriei* Lév., 129

## BREDIA Blume

*hainanensis* Merr. & Chun, 135

## OXYSPORA DC.

*serrata* Diels, 129

## PHYLLAGATHIS Blume

*hainanensis* (Merr. & Chun) C. Chen, 135

*tenuicaulis* C. Chen, 134

## PLAGIOPETALUM Rehd.

*blinii* (Lév.) C. Y. Wu, 129

*esquirolii* (Lév.) Rehd., 129

var. *esquirolii*, 133

var. *quadrangulum* (Rehd.) C. Hansen, 133

var. *septemnervium* C. Chen, 129

var. *serratum* (Diels) C. Hansen, 133

*hainanense* (Merr. & Chun) Li, 135

*henryi* (Kraenzl.) S. Y. Hu, 129

*quadrangulum* Rehd., 129

*serratum* (Diels) Diels, 129

var. *quadrangulum* (Rehd.) C. Chen, 129

*tenuicaule* (C. Chen) C. Hansen, 134

## SONERILA Roxb.

*esquirolii* Lév. 1907, non 1913, 129

*esquirolii* Lév. 1913, non 1907, 129

*henryi* Kraenzl., 129.